USGS
science for a changing world

Highlights of National Liaison Committee Meeting, Washington, D.C., Sept. 24, 2004
The NAWQA Program, 2001–2012

Purpose of Meeting

- To discuss current and anticipated water-quality policy issues and how NAWQA can address those issues most effectively
- To receive input from stakeholders on how best to accommodate future changes in the NAWQA Program resulting from lack of upward adjustments to the NAWQA appropriation to account for inflation and salary increases, thereby minimizing impacts to the Program's ability to provide scientific information to decision makers

Panelists

- Claudia Copeland, Specialist in Resources and Environmental Policy, Congressional Research Service
- Denise Keehner, Director, Standards and Health Development, U.S. Environmental Protection Agency
- Betsy Otto, Senior Director, Watersheds Program, American Rivers
- Robin O'Malley, Senior Fellow and Program Director, The H. John Heinz III Center for Science, Economics, and the Environment

Highlights of Panel Comments and Group Discussion

The panelists provided a brief background about their respective organizations and the role that the NAWQA Program plays in meeting their missions and goals and in addressing water-resource issues facing the Nation. Raised issues included, for example, water-quality standards, impacts from urban development on water quality, gaps in monitoring and modeling of water-quality conditions over time, and methods to effectively improve integration of programs and collaboration among water-resource organizations. Selected quotes are included below.

"The NAWQA Program is unique in its capability to answer whether the Nation's water quality is improving. This is a fundamental long-term issue that policymakers are seeking to address." - Claudia Copeland, Specialist in Resources and Environmental Policy, Congressional Research Service

"The NAWQA Program does an excellent job at reporting its high quality, credible, and unbiased information in an understandable way that creates the needed links between science and water-resource policy. Our organization, which is a leader of a nation-wide river movement made up of thousands of river and watershed groups, depends on the water-quality and ecosystem data generated from this Program to help support the protection of our Nation's rivers." - Betsy Otto, Senior Director, Watersheds Program, American Rivers

"The NAWQA Program provides a critical national focus that helps to quantify the condition of our water resources in a large number of places. Its approach to providing nationally consistent information allows us to make statements that simply could not be made otherwise. Using NAWQA data, we can describe nutrient and contaminant occurrence nationally and among different land uses, and track how those conditions change over time. The Heinz Center depends heavily on NAWQA data to support our periodic report: "The State of the Nation's Ecosystems." We appreciate NAWQA's strong commitment to making its information and data readily accessible to meet our organization's needs and to address the Nation's water-resource information needs." – Robin O'Malley, Senior Fellow and Program Director, The H. John Heinz III Center for Science, Economics and the Environment

"For many years, EPA has worked closely with the USGS NAWQA Program to advance the scientific tools and data that are used to assess risks posed by pesticides in surface water and ground water. Recently, the two agencies have collaborated in developing an extrapolation model that will statistically relate pesticide concentrations to watershed characteristics. Using national data, this model, called WARP (Watershed Regression Program), estimates occurrence and exposure to atrazine for watersheds across the country, with calculated reliability. The model increases EPA's capability to predict potential impacts of pesticide use on water quality, especially in areas where monitoring data are not available and has been used to identify areas where additional monitoring is most needed to evaluate the ecological condition of watersheds." - Elizabeth Behl, Branch Chief of the Environmental Risk Branch, U.S. Environmental Protection Agency

Individual comments by the panelists sparked a productive discussion among other liaison members. Key roles for the NAWQA Program were highlighted in the discussion, some of which include:

1. **Answering the question, "Is water quality changing over time at the national scale?"**

Liaison members agreed that this is a critical need for the Nation and one that the NAWQA Program is uniquely capable of answering.

2. **Supporting assessment and program requirements** of local, State, and Federal policy makers and water-resource managers, such as Clean Water Act requirements, including EPA programs related to 305b, 303d, TMDLs, and designated beneficial uses, and USDA conservation programs.

3. **Maintaining NAWQA's independent, credible, and consistent scientific approach and design,** not driven by current policy agendas. Liaison members agreed, for example, that NAWQA will continue to investigate the whole hydrologic system (such as ground water and surface water) and maintain a primary focus on nonpoint sources of pollution.

4. **Communicating NAWQA scientific findings in terms of current policy, continuing to:**

- Communicate implications of findings through a myriad of forums, including non-technical publications and oral presentations.
- "Market" the availability of NAWQA data, information, and knowledge to policy makers and water-resource managers for assessment and water protection, and to researchers to support their water-resource analyses and research.

5. **Balancing NAWQA resources towards (1) national-scale monitoring at distinct time intervals in order to assess conditions and trends; and (2) determining the causes, effects, and implications of pollution (contaminant sources, land use, physical disturbance, hydrologic transport, and effects on human and ecological health). Inherent in this balance is an emphasis on:**

- A "nationally representative program," as opposed to a large number of local studies that provide a fragmented "program of examples."
- Extrapolative and predictive tools (such as models) that can advance understanding of water-quality conditions and their causes and effects and extrapolate findings to comparable, yet unmeasured areas at the local, regional, and national scales.
- Models verified with monitoring data, and quantifying and communicating the degree of uncertainty associated with model findings.
- Assessments of changes in water quality and aquatic ecosystems related to urban development across the Nation (a unique ability of the NAWQA Program).

6. Collaborating and coordinating with other water-resource agencies to improve:

- Integration of different State and Federal monitoring designs.
- Data availability for assessment requirements.
- Availability of ancillary information for understanding causes, effects, and implications.

Current Direction of the NAWQA Program

- Spending power has been reduced by about 4 percent per year as budgets have not kept up with inflation and cost-of-living increases. Appropriated budgets have remained relatively flat since 1996 at about $63 million. By the end of FY 2001, lack of adjustments for inflation and cost of living increases caused the Program to fall behind by about $20 million (*fig. 1*).
- Geographic scope of the original Cycle I NAWQA design (60 study units) was adjusted to 51 to accommodate inflation and flat appropriations in the mid-1990s. The number of study units was reduced further in the second decade (Cycle II) to 42 study units. Discontinued study units were located away from major population and water-use settings; in mining areas; and in areas dissimilar from most settings in the United States (such as in Alaska, a polar region with low population, and in Hawaii, an island).
- Study design of Cycle II studies was based on the assumption that funding would include cost-of-living and inflationary increases beginning in FY 2002. However, these increases either were not requested or were not appropriated.

Additional changes in Cycle II study design include:

- Decreased from 145 to 84 the number of long-term stream monitoring sites to assess water-quality trends (*fig. 2A,B*). It is anticipated that this network of 84 sites can be sustained at current funding levels through 2010.
- Discontinued sampling at 347 sites sampled during Cycle I that were intended to be periodically re-sampled in Cycle II for status, trends, and assessment (*fig. 2C*).
- Reduced the magnitude of activities within the 42 study units. Foremost, comprehensive assessments and reporting will not be done at the study-unit scale; ability to address local and State issues is thereby minimized. Instead, NAWQA will assess status and trends at a regional scale, within 8 major river basins and 18 principal aquifer systems (see briefing document on these regional studies, "Cycle II Regional Assessments of Aquifer Systems and Streams and Rivers"). In addition to providing monitoring data for status and trends assessments within the major river basins and principal aquifer systems, each study unit will conduct only one special study to support the five national topical studies designed to provide an understanding of the causes and effects of specific water-quality issues (mercury, urbanization, agricultural chemicals, nutrient enrichment, and contaminants in public-supply wells).

Current distribution of NAWQA funding

- 60 percent of funds are provided to the field to support monitoring, data analysis, and reporting on status and trends, and the remainder supports project management (9 percent), the 5 national topical studies, and the research

necessary to analyze and understand the implications of monitoring data.
- 70 percent of the funds for status and trends support data collection and the remainder supports analysis and reporting.
- Funds for status and trends activities are divided equally between surface water and ground water, which is consistent with water use across the Nation.

Continued funding reductions during Cycle II could be accommodated by:

- Reducing the geographic scope by eliminating study units.
- Extending the time for analysis and products (which would result in the release of regional products every 3-5 years and release of national products every 5-7 years).
- Reducing the scope of assessments related to the number of contaminants included in analyses, the national topical studies, and monitoring and assessments of trends.

The discussion indicated that no option was favorable, but that extending the time in which work is done is the most palatable of the three options. Operations at the regional scale were generally acceptable as long as the NAWQA Program continued to "stay true to what managers were doing on the ground" and continued to seek ways to transfer regional findings to more local scales.

Briefing materials (available on-line; paper copies available upon request)

Fact Sheets on NAWQA topical studies

- Studies by the U.S. Geological Survey on Sources, Transport, and Fate of Agricultural Chemicals: U.S. Geological Survey Fact Sheet 2004-3098
  http://water.usgs.gov/pubs/fs/2004/3098/
- New Studies Initiated by the U.S. Geological Survey—Effects of Nutrient Enrichment on Stream Ecosystems: U.S. Geological Survey Fact Sheet 118-03
  http://water.usgs.gov/pubs/fs/fs11803/
- Mercury in Stream Ecosystems—New Studies Initiated by the U.S. Geological Survey: U.S. Geological Survey Fact Sheet 016-03
  http://water.usgs.gov/pubs/fs/fs-016-03/
- Effects of Urbanization on Stream Ecosystems: U.S. Geological Survey Fact Sheet 042-02
  http://water.usgs.gov/pubs/fs/fs04202/
- National Water-Quality Assessment Program—Assessing the Vulnerability of Public-Supply Wells to Contamination
  http://water.usgs.gov/wicp/acwi/nawqa/vulnerability.pdf
  (U.S. Geological Survey Briefing Document; availability as a USGS Fact Sheet planned for 2005)

Program documents describing Cycle II

- The National Water-Quality Assessment Program—Entering a New Decade of Investigations: U.S. Geological Survey Fact Sheet 071-01
  http://water.usgs.gov/pubs/fs/fs-071-01/
- National Water-Quality Assessment Program—Cycle II Regional Assessments of Aquifer Systems and Streams and Rivers
  http://water.usgs.gov/wicp/acwi/nawqa/Cycle-II.pdf
  (U.S. Geological Survey Briefing Document; availability as a USGS Fact Sheet planned for 2005)

Contact

Donna N. Myers, Chief, National Water-Quality Assessment Program 703.648.5012; dnmyers@usgs.gov

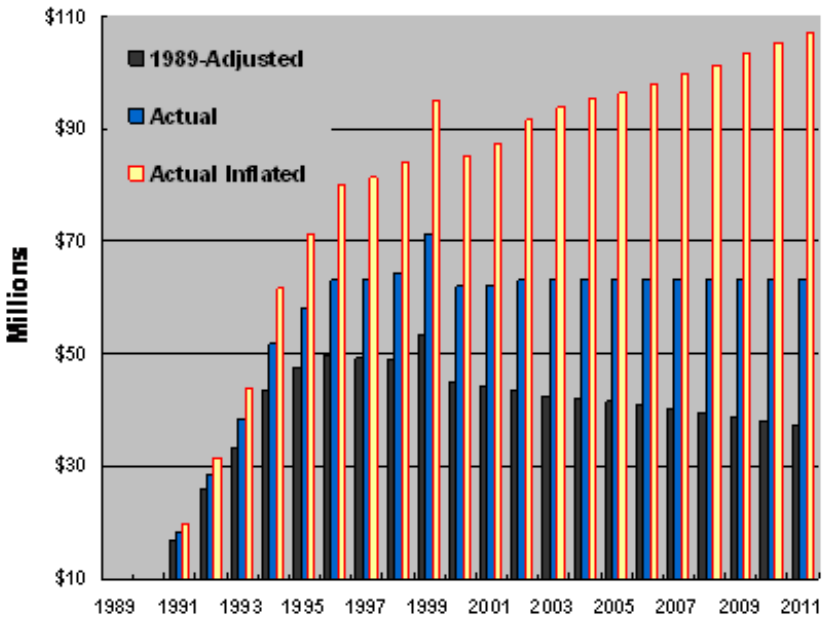

Figure 1. Inflation-adjusted compared to actual and projected appropriations for the National Water-Quality Assessment Program, 1989-2011. In 2004, the difference between the actual and inflation-adjusted appropriation was $21.3 million.

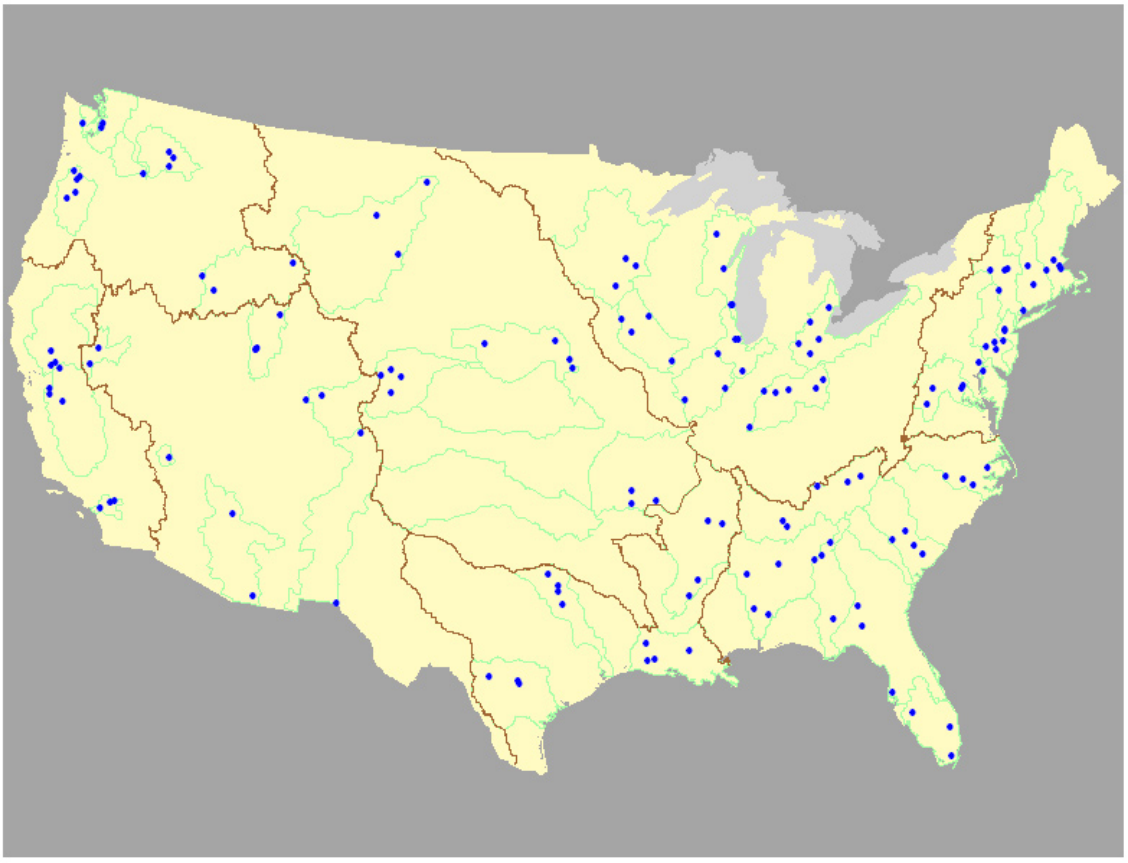

Figure 2A. Original network of 145 stream sites continuously monitored for long-term trends.

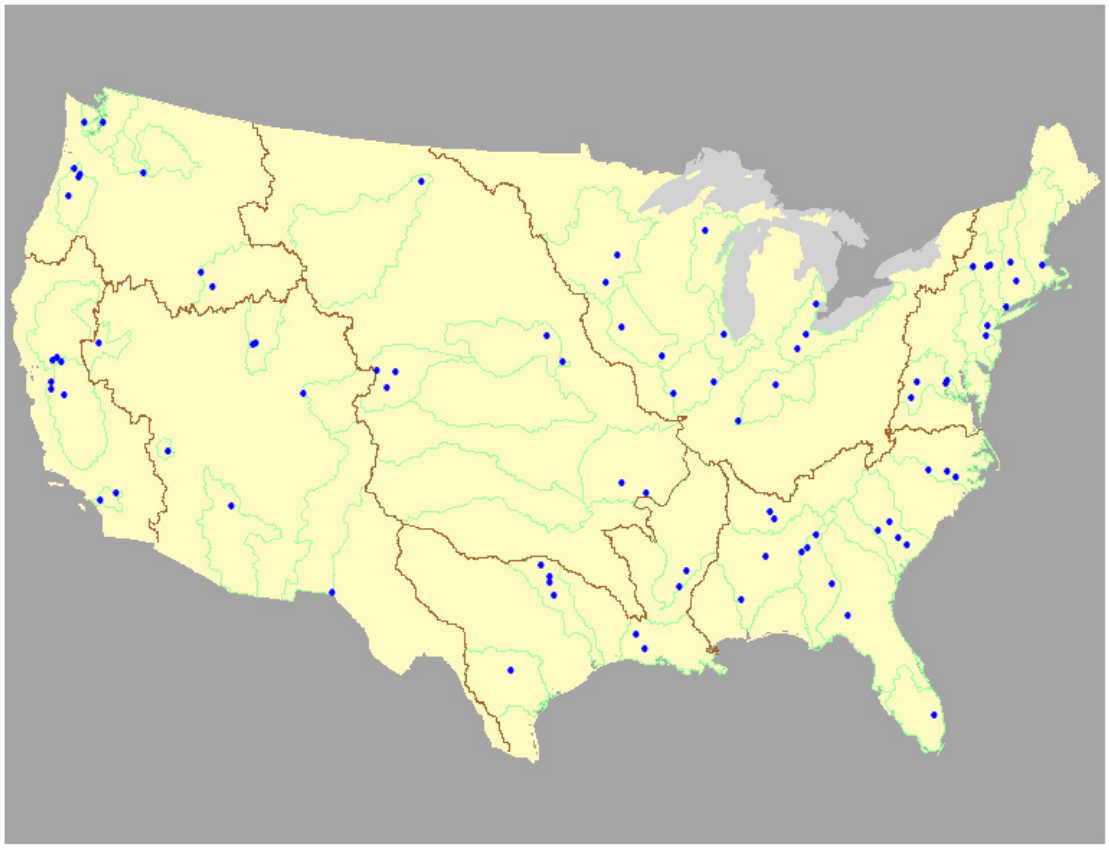

Figure 2B. Cycle II network downsized to 84 continuously monitored long-term trends sites.

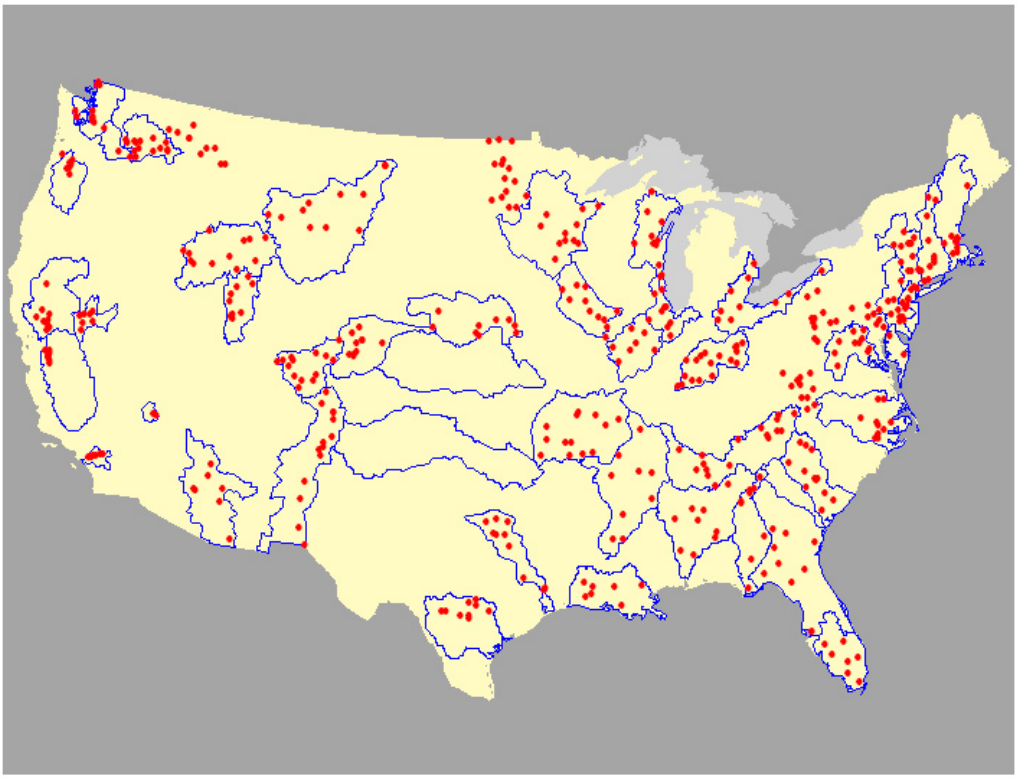

Figure 2C. Discontinued sites that were sampled in Cycle I and that were intended to be sampled periodically in Cycle II for status, trends, and assessment.